Elcontrol Energy Net

Presentation

NanoVIP2-NanoVIP3

NanoVIP2

NanoVIP is the new handheld three phase power quality energy analyzer energy, able to combine a high level of performance with an extremely competitive price.
What makes it unique is its small size, however, the instrument has all the features normally found so far only in high-end products.

NanoVIP3

NanoVIP is therefore a measuring instrument for anyone who requires a product easy to handle, precise and easy to use.
Is therefore aimed to users who want to acquire a thorough knowledge of thir plants, both Energy Managers, Fitters, Electricians, Contractor, for the activities of diagnosis and intervention, or who want to offer a consulting service concerning all matters related to the electricity.

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NanoVIP3 makes it possible to:

- **Control loads, consumption and costs;**
- **Test the correct dimensioning of new plants;**
- **Prevent risk to overheating and lack of insulation due to high harmonic content;**
- **Correctly resolve the problems of power factor correction;**
- **Identify and eliminate peak load of power to also reduce the electricity consumption;**
- **Monitor power and consumption in different time zones**
- **Monitor and evaluate the performance of UPS, with measures AC input and DC output (or vice versa);**

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- Measure signals including non-symmetrical PWM control of inverter;
- Identify the causes of issues resulting from a poor quality electrical (presence of harmonics, interruptions, overloads, voltage dips, phase unbalance voltage) which, in addition to causing potential production blocks, may damage or shorten the life cycle of of plant and machinery.

The new NANOVIP series will be available in two main versions:

- For the analysis of three-phase electrical systems (NanoVIP3)
- For the analysis of single-phase electric systems (NanoVIP2)

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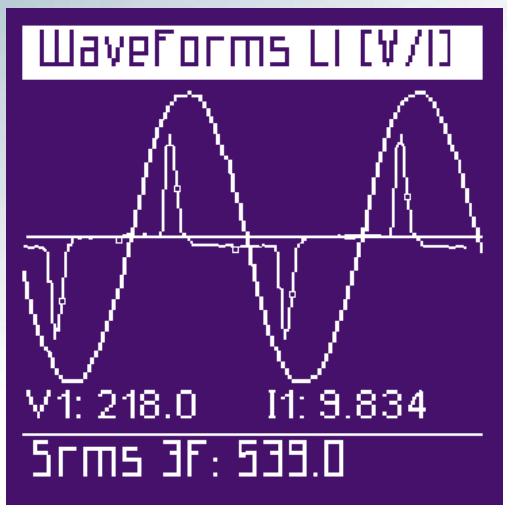
- **Both versions above are equipped with a large graphic LCD with high efficiency, which allows the visualization of waveforms, graphics, etc.. and the use of a multilingual menu (English, Italian, Spanish,German,French).**



- **The white pixels on indigo provide exceptional visibility of the display.**

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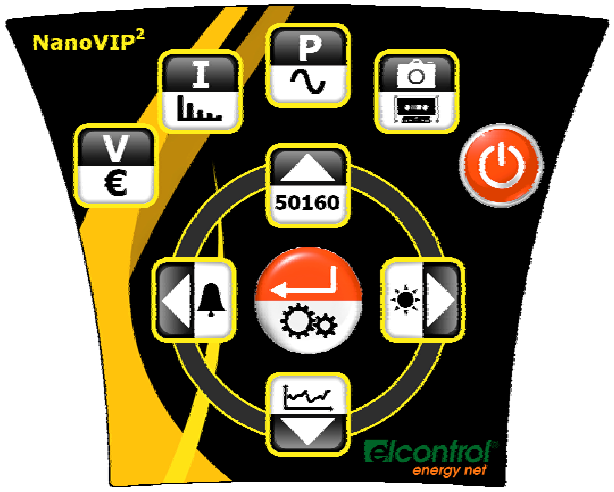
An elegant keyboard with 10-key dual function allows the user an easy and intuitive navigation menu



1) **VOLTAGES** Menu (**V**),
press key once to access menu.

2) **CURRENTS** Menu (**I**),
press key once to access menu.

3) **POWERS** Menu (**P**),
press key once to access menu.

4) **COUNTERS** Menu (**€**),
press and hold key down **for 3"** to access menu.

5) **HARMONICS** Menu (),
press and hold key down **for 3"** to access menu.

6) **WAVEFORMS** Menu (),
press and hold key down **for 3"** to access menu.

7) **AUX CHANNEL** Menu (υ)
press key once to access menu.

8) **SNAPSHOT** Function (),
press key once to access menu.

9) **EN 50160** Menu (**50160**),
press and hold key down **for 3"** to access menu.

10) **ALARMS** Menu (),
press and hold key down **for 3"** to access menu.

11) **TRANSIENTS** Menu (),
press and hold key down **for 3"** to access menu.

12) **MEASUREMENT CAMPAIGNS** Menu (),
press and hold key down **for 3"** to access menu.

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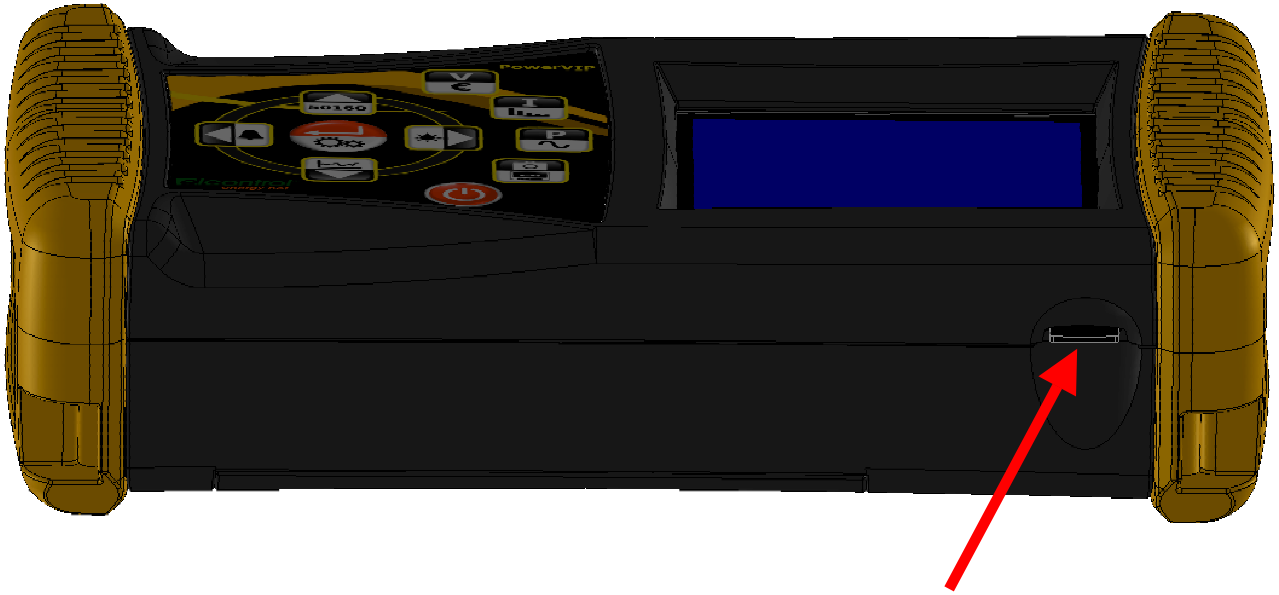
The instrument can be indifferently grasped through its ergonomic rubber, or else placed on a plane thanks to an integrated removable support , both to simplify the measurement operations on the field, that the use near to a PC.

NanoVIP is equipped with a slot for a 2 GB uSD memory card, which can be used to store measurement campaigns data (Sect. 5.2.11.2), fast transients (Sect. 5.2.10.1) and inrush currents (Sect. 5.2.10.2).



uSD Card SLOT

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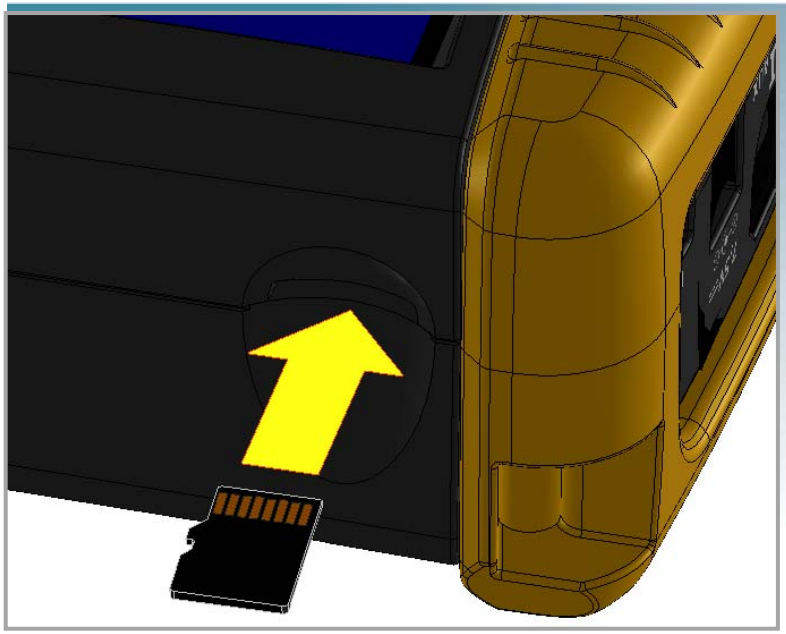

In fact, the availability of a microSD memory card for storing data and a USB port for communication with a PC, allows the creation of accurate measurement campaigns and the subsequent analysis of the data using the dedicated software supplied.

The uSD card is supplied with the instrument, together with the:

- **User Manual**
- **PC software (See software manual for use)**

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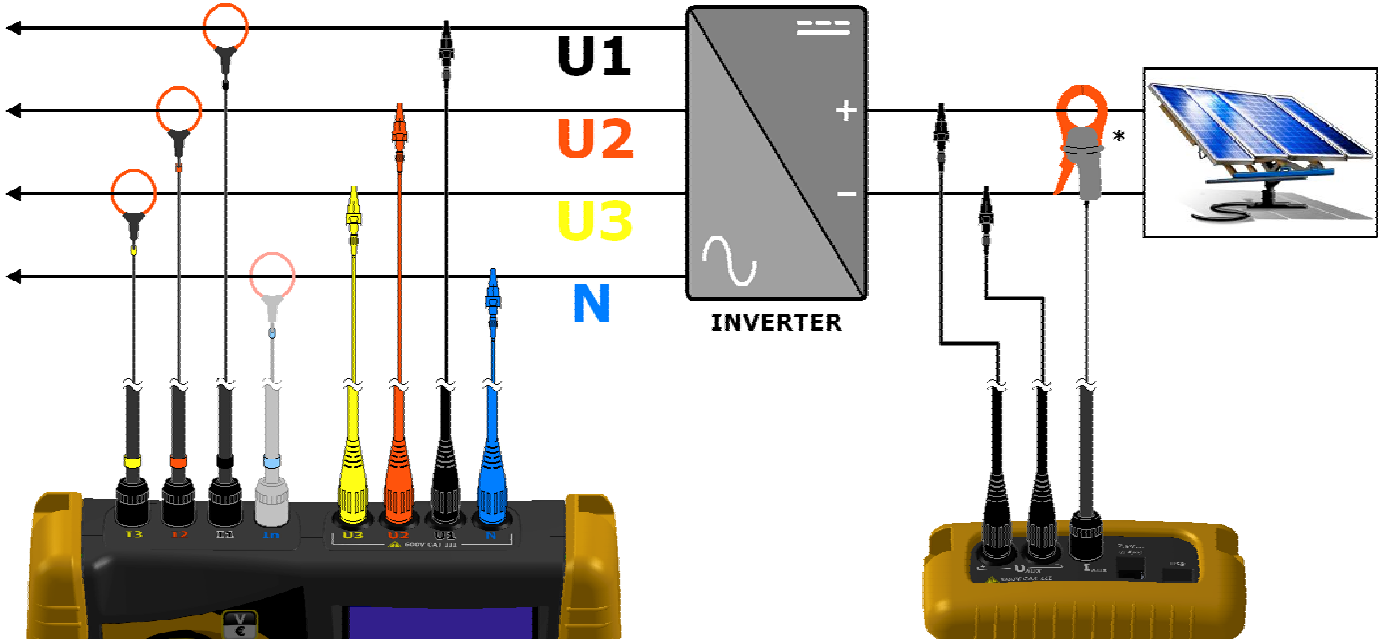
A further innovation is the equipment of mini flexible current probes. This feature significantly improves the portability and handling of the instrument, reducing weight and size, without impairing the possibility of measurement.

CODE 4AAZA
CAPTORE
MINIFLEX
210mm 3KA

All Nanovip series enables measures in DC.

Some examples of electrical connections are shown below.



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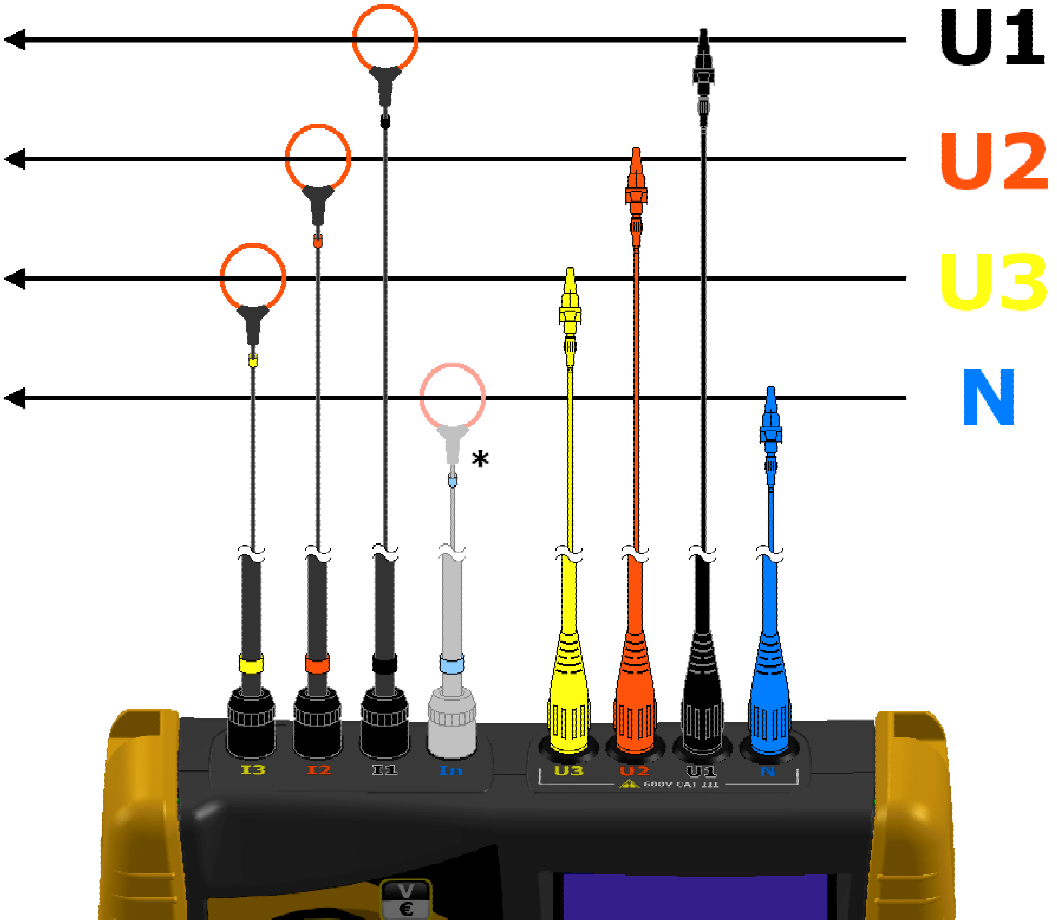
3Φ+N
3Φ+N-BL



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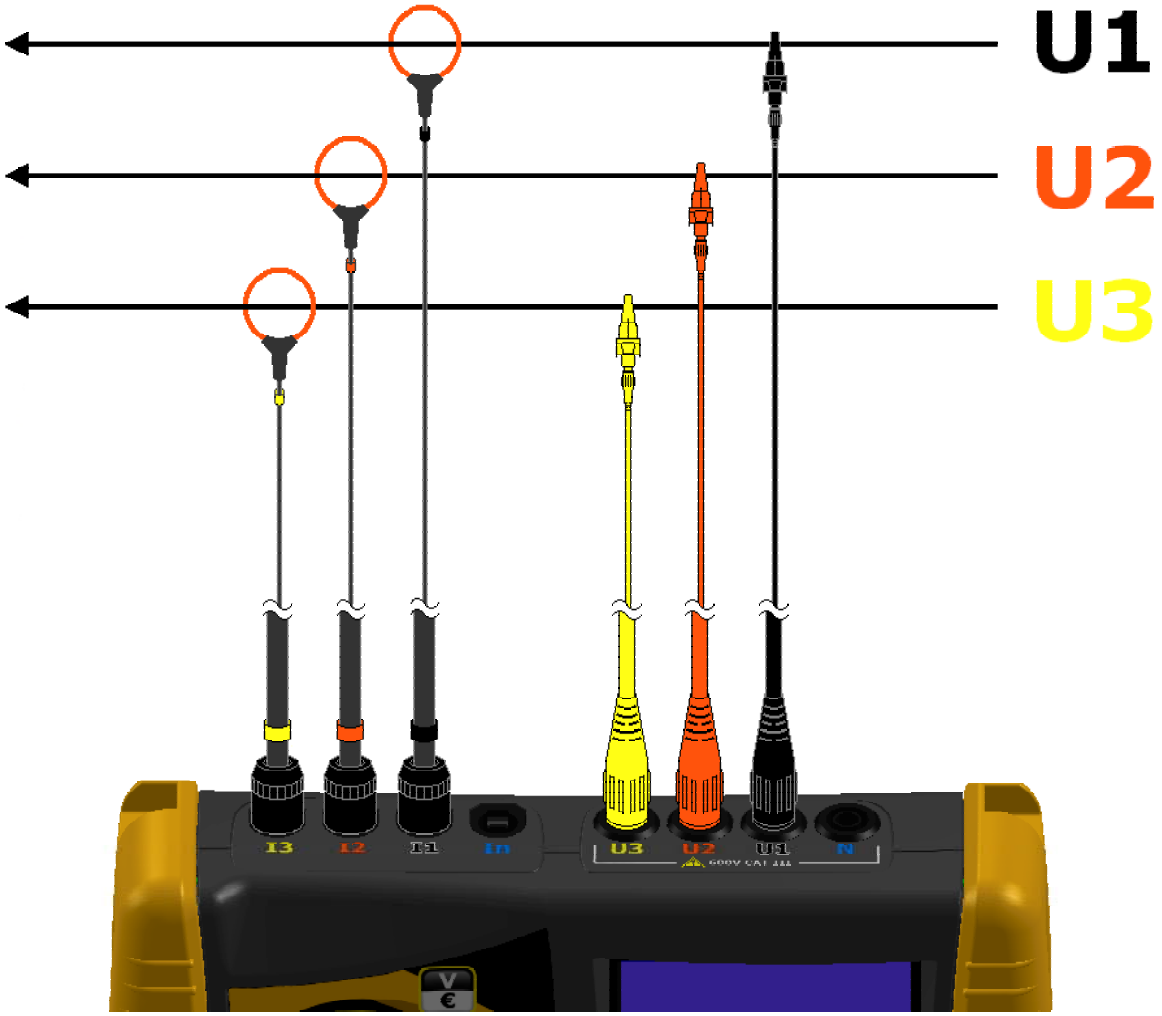
3Φ
3Φ-BL



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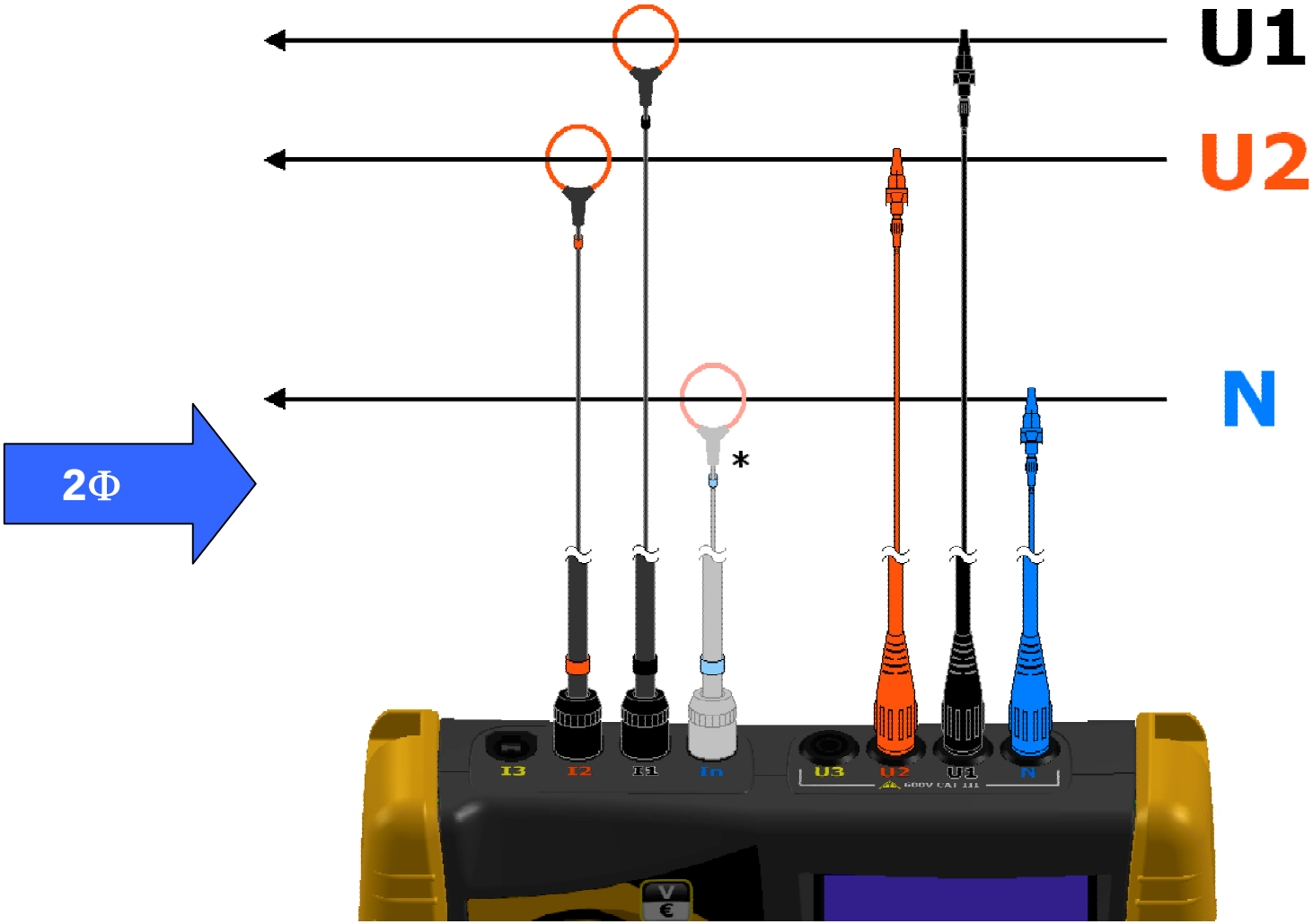

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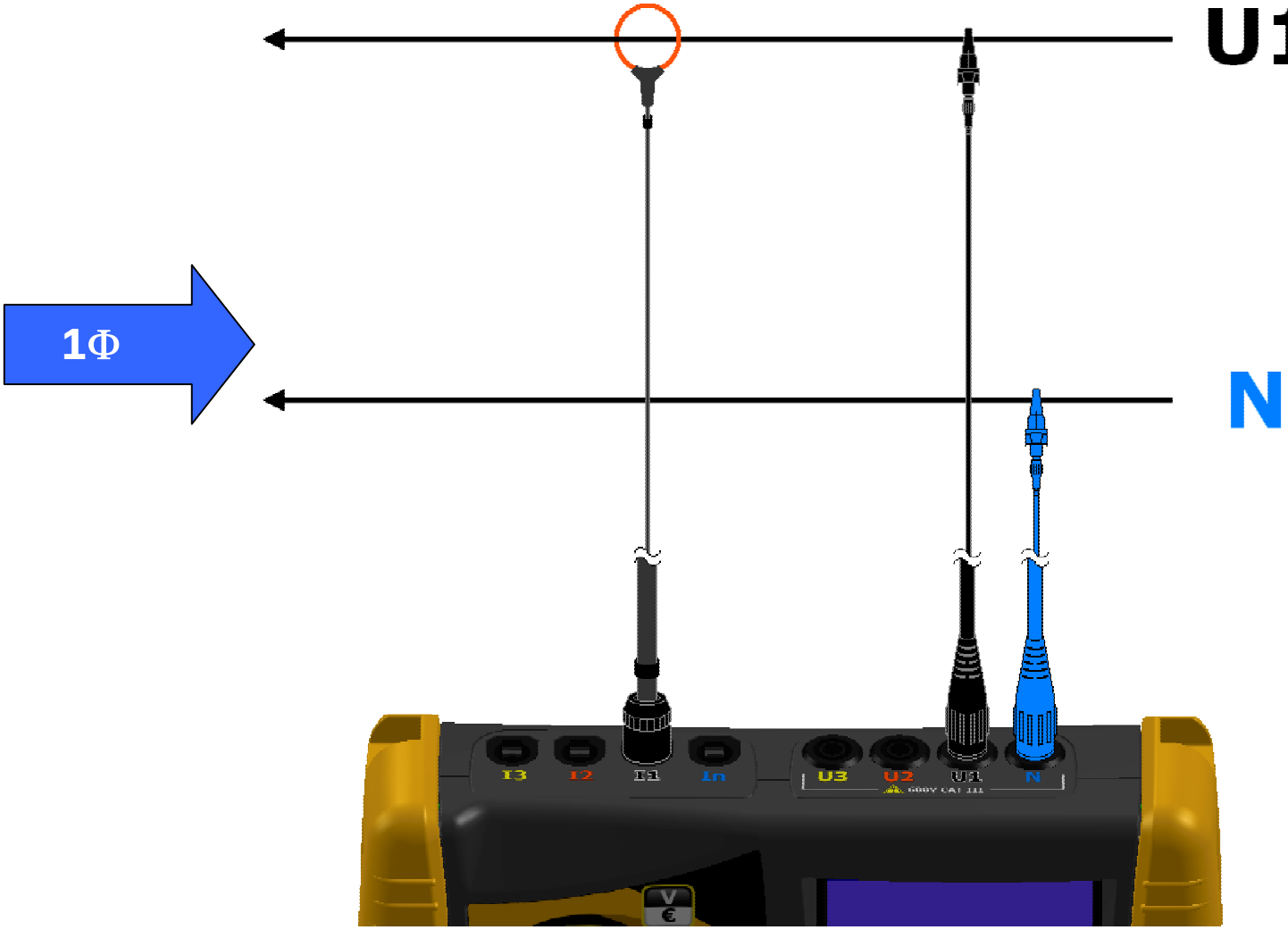

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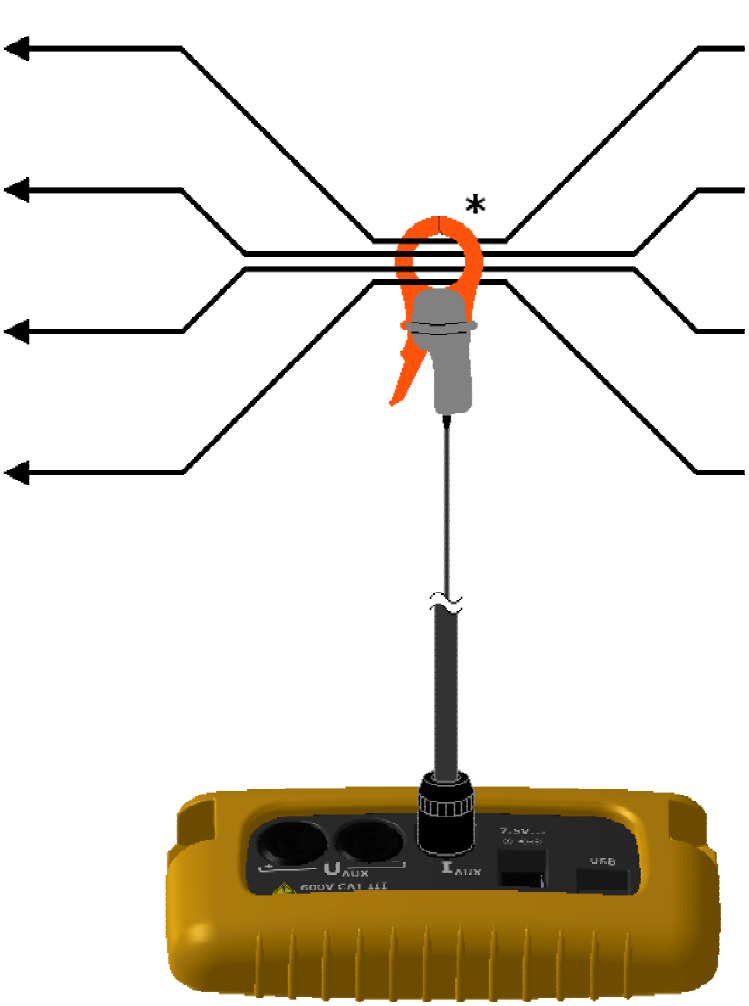
Dispersion Measurement I
(can be combined with the previous schemes)



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The main features of the series NanoVIP3 are:
ability to connect and analyze various types of Electrical Systems

- **singlephase (all models)**
- **twophase (NanoVIP3)**
- **balanced three-phase with or without neutral (all models)**
- **unbalanced phase with or without neutral (NanoVIP3).**

Single phase connection

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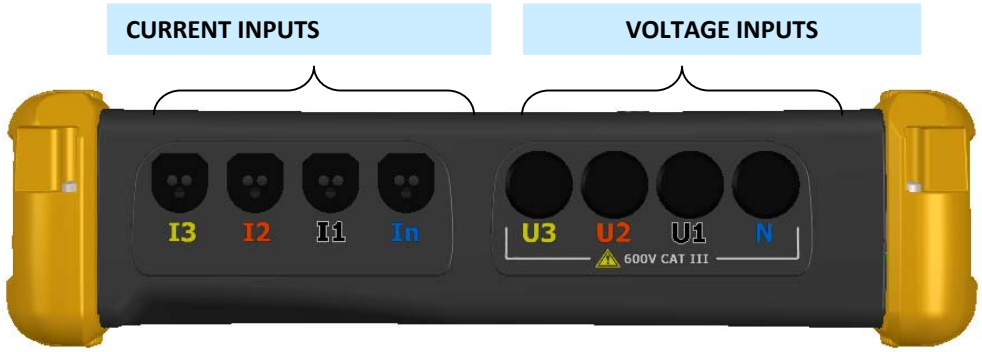
threephase connection



An independent, auxiliary voltage input (U_{AUX}) and an independent, auxiliary current input (I_{AUX}) are also available.
The cables and current sensor for such channels are optional.

AUX connection

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FULL TRADITIONAL ENERGY ANALYSIS

(V, I, P, Q, S, F, PF, THD%, actual values / minimum / maximum / average, energy meters and consumption generated for each phase and single phase).

Current [A]	U [V]
L1 0.798	217
L2 0.805	217
L3 0.770	217
3PH 0.791	

Prms 3F: -223.9

Reactive [var]	PF
L1 132.0	-0.42
L2 133.4	-0.44
L3 130.1	-0.42
3PH 395.5	

Qrms 3F: 395.5

Total E. [kVAh]
L1 00.84
L2 00.87
L3 00.85
3PH 02.57

Qrms 3F: 587.4

Current THD %	THDV%
L1 100.0	4.32
L2 99.95	4.30
L3 97.28	4.27
3PH 99.07	

Prms 3F: -201.1

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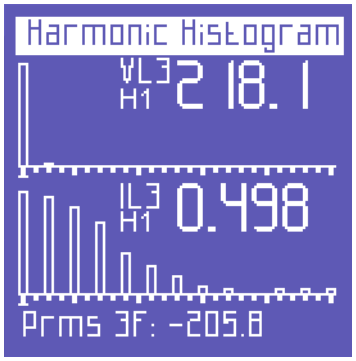
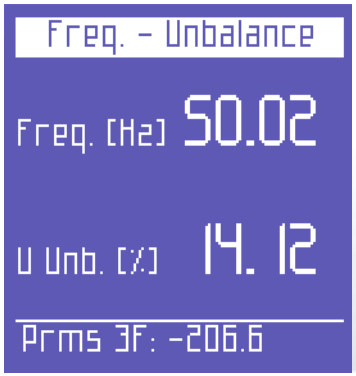
ANALYSIS OF POWER QUALITY PARAMETERS

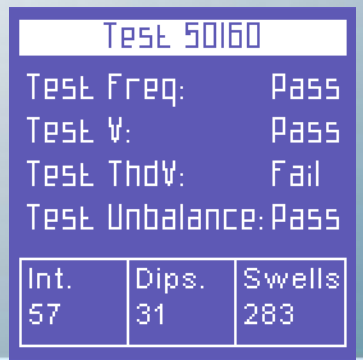


harmonics of current and voltage for each phase and for the neutral

net interruption, overvoltage, sags,



phase unbalance voltage



Test according to EN 50160.

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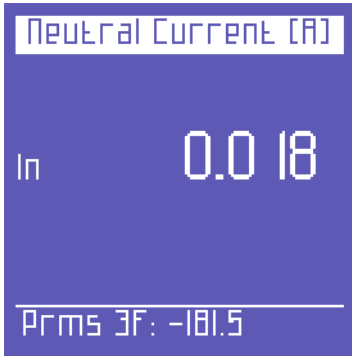
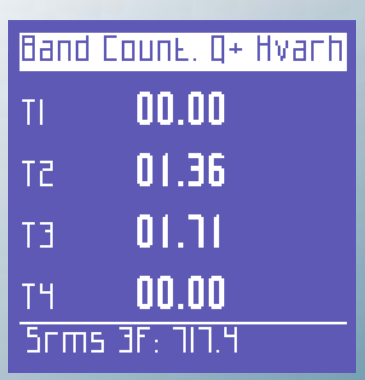
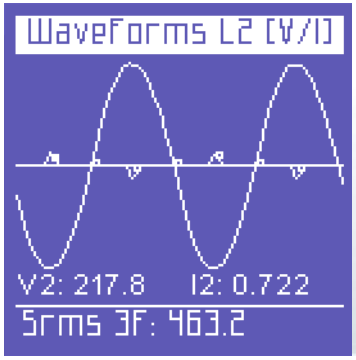
ADVANCED FEATURES



real measurement of the neutral current,



setting four tariff bands with display of relative costs



display waveforms of currents and voltages,

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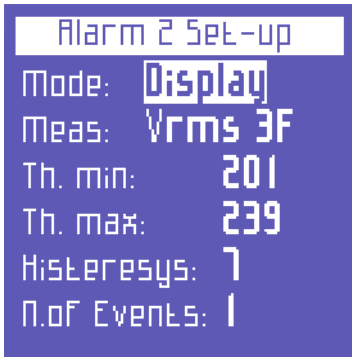
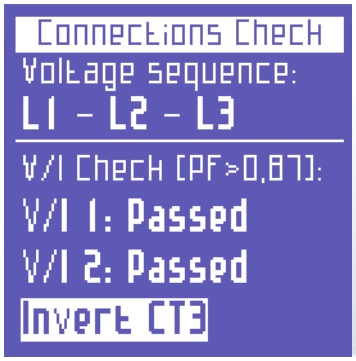
ADVANCED FEATURES



Configuration and display of alarms and thresholds on selectable measurement



Check del corretto collegamento dello strumento all'impianto

choice of language

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SUMMARY OF FUNCTIONS

	NanoVIP3	NanoVIP2
MECÁNICAS		
TYPE	HANDHELD	HANDHELD
Dimention	203 x 116 x 53 mm	203 x 116 x 53 mm
Weight	580 g	580 g
Protection	IP30	IP30
Container material	ABS V0 e EPDM	ABS V0 e EPDM
ELECTRICAL		
Singlephase		
Threephase		
Input Voltage	4 (3 + N común + AUX)	1
Input Current	5 independent	1
Safety	600 V CAT III	600 V CAT III
POWER SUPPLY		
Battery Package	4 x AA 2100 mAh	4 x AA 2100 mAh
Power supplier/batterycharger. ext.	100-240 Vca / 50-60 Hz	100-240 Vca / 50-60 Hz
Autonomy charge	>24 h	>24 h

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	NanoVIP3	NanoVIP2
USER INTERFACE		
LCD		
Type	Graphic LCD	Graphic LCD
Dimention	68 x 68 mm	68 x 68 mm
Definition	128 x 128	128 x 128
Color	White Pixel / Indigo Background	White Pixel / Indigo Background
Back light		
Menú	multilingual	multilingual
Teclado	10 membrande keys	10 membrande keys

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	NanoVIP3	NanoVIP2
Threephase counter		
Counter for each phase		
Cogeneration		
Waveform		
Harmonics	Up to 50ª	Up to 50ª
Histogramm Harmonics		
Dips	>500 ms	>500 ms
Swells	>500 ms	>500 ms
Interruptions	>500 ms	>500 ms
Fast Transient		
Trend		
Unbalance Voltage		
Test EN 50160		
Neutral current		
Inrush current		
DC Measure		
Allarms		
K factor		
Voltage	1000 Vca phase-phase 700 Vca phase-neutral 1000 Vcc	1000 Vca phase-neutral 1000 Vcc
Current	Up to 3000 A (with miniflex)	Up to 3000 A (with miniflex)
Frequency	40÷70 Hz	40÷70 Hz
Tariffs band		

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NanoVIP3 NanoVIP2

PRECISION		
Voltage	±0,25% +0,05 F.S.	±0,25% +0,05 F.S.
Current	±0,25% +0,05 F.S. ± Σ pinza	±0,25% +0,05 F.S. ± Σ pinza
Power	±0,5% +0,05 F.S. ± Σ pinza	±0,5% +0,05 F.S. ± Σ pinza
Measurement camping		
Alarm Log		
ANALYZED SYSTEM		
Singlephase		
Two phase		
3fi + N, balanced		
3fi + N, Unbalanced		
3fi Without neutral , balanced		

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NanoVIP3 NanoVIP2

COMUNICATION		
USB	To PC	To PC
Wireless (ZigBee)		
DATA RECORDING		
Internal memory	64 kB	64 kB
External memory	MicroSD 2GB	MicroSD 2GB
ENVIRONMENT		
Functioning temperature	da -10 a +55 °C	da -10 a +55 °C
Storage temperuature	da -20 a +85 °C	da -20 a +85 °C
Max. Humidity	95% (no condensation allowed)	95% (no condensation allowed)
REFERENCE STANDARDS		
EN 61010-1		
EN 61326		
EN 61326/A1		
EN 61326/A2		
EN 61326/A3		
IEC 60068-2-1 (Operating temperature)		
IEC 60068-2-2 (Storing temperature)		
IEC 60068-2-6		
IEC 60068-2-30 (Humidity)		
IEC 60947-1		

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	NanoVIP3	NanoVIP2
KIT COMPOSITION		
Mini flexible clamp	3	1
Voltage cable	4	2
Crocodiles	4	2
Voltmetric tip		1
Cable /miniUSB-B		
External power supply		
CD software		
MicroSD card	2 GB	2 GB
Hard case		
ACCESSORIES		
Clamp 1000 A/1 V		
Clamp 200 A/1 V		
Clamp 5 A/1 V		
Flexible Clamp 1000 A 40		
Flexible Clamp 3000 A 80 (nueva)		
Clamp 400 A de CC		
Clamp 1000 A de CC		
CLAMP measuring dispersion		
Set auxiliary voltage cable		
Set 4 voltage cable 4		
Hard case		
Battery package NiMh		

NanoVIP2

Kit includes:

1 NanoVIP²Power Analyser
1 Battery pack
2 Voltage cables
2 Crocodile clips, which can be opened
1 Voltage tip
1 Amperometric sensor (type left to user's discretion)
1 USB-A/miniUSB-B connection cable
1 2GB microSD memory card (containing the PC NanoStudio software and user manual)
1 External wall-plug power supply with interchangeable plugs
1 Rigid box (type will depend on current clamp(s) desired)

NanoVIP2

ACCESSORIES & SPARE PARTS

Moreover, NanoVIP^2 may come with a range of accessories, which are listed in the table below. These accessories allow for the instrument to be used for special purposes or measurement conditions which are less common than standard measurement operations.

ACCESSORIES	
Code	**Description**
4AAWS	1000A Clamp
4AR10	200A Clamp
4AAYW	5A Clamp
4AAZA	Nanoflex (21cm 3000A flexible mini-clamp)
4AAXS	40cm flexible current sensor
4AADM	LMA clamp (dispersion measurement)
4AAER	5A/1V SEPA (for medium voltage measurements)
SPARE PARTS	
Code	**Description**
6MAON	NanoVIP$^{2-3}$ battery pack
4AQ03	NanoVIP$^{2-3}$ power supply
4AQ05	Little box
4AQ06	Big box
4AQ02	Set of 2 voltage cables + 2 crocodile clips + rigid tip
4AQ04	USB-A/miniUSB-B cable
4AUSD	2GB uSD memory card containing NanoStudio software and user manual

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NanoVIP3

Kit includes:

- n. 1 NanoVIP³ handheld energy analyser
- n. 1 battery pack
- n. 4 voltage cables (yellow, black, red, blue) with integrated alligator clips
- n. 3 current probes (type chosen by the user)
- n. 1 USB-A/miniUSB-B connection cable
- n. 1 memory card MicroSD 2GB (containing the PC software NanoStudio and the user manual)
- n. 1 wall-plug power supply
- n. 1 hard carrying case

NanoVIP3

ACCESSORIES & SPARE PARTS

NanoVIP^3 may come with a range of accessories, which are listed in the table below. These accessories allow for the instrument to be used for special purposes or measurement conditions which are less common than standard measurement operations.

Code	Description
4AAWS	1000A Clamp
4AR10	200A Clamp
4AAYW	5A Clamp
4AAZA	Nanoflex (21cm 3000A flexible mini-clamp)
4AAXS	1000A 40cm flexible current sensor
4AADM	LMA clamp (dispersion measurement)
4AQ02	Set of voltage cables for the aux channel (2 cables + 2 alligator clips + rigid toe)
4AAER	5A/1V SEPA (for medium voltage measurements)
SPARE PARTS	
Code	**Description**
6MAON	NanoVIP$^{2-3}$ battery pack
4AQ03	NanoVIP$^{2-3}$ power supply
4AQ05	Little carrying case
4AQ06	Big carrying case
4AQ01	Set of 4 voltage cables (yellow, black, red, blue) with integrated alligator clips
4AQ04	USB-A/miniUSB-B cable
4AUSD	memory card MicroSD 2GB (containing the PC software NanoStudio and the user manual)

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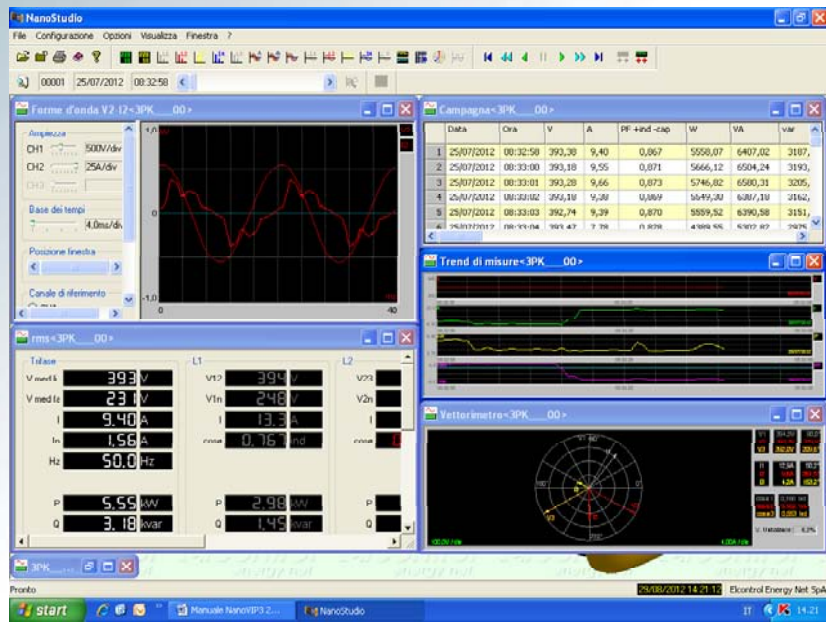
SOFTWARE NANOSTUDIO

- **The software NanoStudio is a simple and convenient tool for analyzing memory campaigns made with the instrument NANOVIP**
  "NanoStudio is compatible with operating systems WINDOWS XP, WINDOWS VISTA and WINDOWS7, and to install it you need to run SETUP.EXE contained in the supplied card micoSD and follow the instructions displayed on the computer screen.
  "Through this software, the operator can analyze all the events recorded in the campaign, export measurements performed in a EXCEL file, report, etc..



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Elcontrol Energy Net S.r.L.

THE END